

## CLAIMS:

1. A method for the presentation of information concerning variations of the arterial filling with blood (perfusion) of organs of living beings on the user surface (10) of a display unit, in which method the data required for the presentation (perfusion index) is determined, using an algorithm, from measuring values produced by a non-invasive  
5 photometric measuring process for determining the arterial oxygen saturation of the blood, characterized in that a first perfusion index is defined as a reference value and the subsequent perfusion indices are determined as relative deviations with respect to the reference value, said relative deviations being presented as information concerning the variations of the perfusion on the user surface (10).

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2. A method as claimed in claim 1, characterized in that the determination of the reference value takes place automatically at the beginning of the photometric measuring process.

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3. A method as claimed in claim 1, characterized in that the instant of determination of the reference value can be chosen at will.

4. A method as claimed in the claims 1 to 3, characterized in that the reference value is stored on a memory chip.

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5. A method as claimed in one of the preceding claims, characterized in that the reference value as well as the subsequent perfusion indices are scaled by a factor.

6. A method as claimed in claim 5, characterized in that the factor is adjustable.

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7. A method as claimed in one of the preceding claims, characterized in that the variation of the perfusion is presented in numerical form.

8. A method as claimed in one of the preceding claims, characterized in that analog graphic elements (42, 44) are used for the presentation.

9. A method as claimed in claim 8, characterized in that bar elements (42, 44) are  
5 used as the graphic elements.

10. A method as claimed in claim 9, characterized in that the relative variations of the perfusion are represented by different bar lengths.

10 11. A method as claimed in claim 8, characterized in that a representation in conformity with a tachometer display is used as the graphic element.

12. A method as claimed in claim 8, characterized in that the display is formed as a multidimensional type in conjunction with other physiological variables, notably as a spider  
15 diagram.

13. A method as claimed in one of the preceding claims, characterized in that an upper alarm limit and a lower alarm limit are provided.

20 14. A method as claimed in claim 13, characterized in that the alarm limit is adjustable.

15. A method as claimed in the claims 13 and 14, characterized in that an acoustic and/or optical alarm signal is triggered when the alarm limit is exceeded.

25 16. A method of determining the quality of the measuring values (signal quality) derived by means of a photometric measuring process, notably in combination with a method as claimed in one of the preceding claims, characterized in that the signal quality is determined by a single one or a combination of the following variables:

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- saturation-independent perfusion index
  - transmission factor
  - extent of ambient disturbances, such as stray light, EM radiation and the like
  - shape of the PLETH signal
  - strength and/or duration of artifacts.

17. A method of determining the quality of the measuring values (signal quality) derived by means of a photometric measuring process, characterized in that the signal quality is determined by the modulation factor (AC/DC) of one or more wavelengths in combination  
5 with one or more of the following variables:

- saturation-independent perfusion index
- transmission factor
- extent of ambient disturbances, such as stray light, EM radiation, and the like
- shape of the PLETH signal
- 10 - strength and/or duration of artifacts.

18. A method of presenting the quality of the measuring values (signal quality) derived by means of the photometric measuring process, notably as claimed in claim 16 or 17, characterized in that this information is graphically presented on the user surface (10) by  
15 way of different coloring of icons and/or background areas, notably in green for everything o.k., yellow for dubious quality and red for a poor quality.

19. A method as claimed in claim 18, characterized in that the icons are identical to the graphic elements (42, 44) used for the presentation of the perfusion.

20. A method as claimed in claim 18 or 19, characterized in that the icons are independent graphic elements (52), notably segment-like or bar-like presentations, color-encoded surface elements or circular elements arranged in the form of a traffic light.

21. A device for carrying out the method, comprising  
a pulseoximeter for determining the arterial O<sub>2</sub> saturation and for calculating the perfusion index in order to determine the information concerning the variation of the perfusion, means for the detection of interference signals, notably motion artifacts, and for estimating the quality of the measuring values acquired and hence the information concerning a  
30 variation of the perfusion, and  
means for presenting the information.